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Dai

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(54) **COMPOUND MODULATION TRANSFER FUNCTION FOR LASER SURGERY AND OTHER OPTICAL APPLICATIONS**

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Related U.S. Application Data

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(60) Provisional application No. 60/519,885, filed on Nov. 13, 2003, provisional application No. 60/468,387, filed on May 5, 2003, provisional application No. 60/468,303, filed on May 5, 2003, provisional application No. 60/431,634, filed on Dec. 6, 2002.

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USPC **351/205**; 351/246

(58) **Field of Classification Search**

USPC 351/205, 212, 219, 246, 247

See application file for complete search history.

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(57) **ABSTRACT**

Methods, devices, and systems establish an optical surface shape that mitigates or treats a vision condition in a patient. An optical surface shape for a particular patient can be determined using a set of patient parameters for the specific patient by using a compound modulation transfer function (CMTF). The compound modulation transfer function can include a combination of modulation transfer functions (MTF's) at a plurality of distinct frequencies.

20 Claims, 51 Drawing Sheets